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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,082	03/15/2004	Hisham Menkara	031204	9484

7590 03/23/2006

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EXAMINER

HODGES, MATTHEW P

ART UNIT PAPER NUMBER

2879

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,082	MENKARA ET AL	
	Examiner	Art Unit	
	Matt P. Hodges	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10-14, 16-18, 22, 24-28, 30-32 and 34-42 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 15, 19-21, 23, 29 and 33 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/15/2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 5, 6, 10, 30, 31, 34, 35, 38, 39, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Sun et al. (US 5,677,594)

Regarding claims 1, 2, 5, 6, 10, 30, 31, 34, 35, 38, 39, and 41, Sun discloses the use of light emitting device including a white emitting mixture of $\text{Sr}_{0.5}\text{Ca}_{0.5}\text{Ga}_2\text{Se}_4\text{:Ce,F}$. (Column 5 lines 5-35). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively. Further Sun discloses the use of multiple phosphors with difference activators in order to generate white light. (Column 2 line 4-16).

Claims 16-18, 22, 25, 26, 30, 31, 32, 36, and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Chua et al. (US 2005/0156510)

Regarding claims 16-18, 22, 25, 26, 30, 31, 32, 36, and 39, Chua discloses the use of light emitting device including a white emitting mixture of $\text{BaGa}_4\text{S}_7\text{:Eu}$. (Paragraph 0024). The activator would be doped in concentrations of between .0001% and 10% mol percent

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respectively. Further the phosphors are used on an device with a blue emitting diode.

(Paragraph 0017).

Claims 16-18, 22, 24-28, 30, 31, 32, 36, and 38-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Yano et al. (US 5,677,594)

Regarding claims 16-18, 22, 24-28, 30, 31, 32, 36, and 38-42, Yano discloses the use of light emitting device including a white emitting mixture of $\text{BaGa}_4\text{S}_7\text{:Eu}$. (Paragraph 0046). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively. Further Yano discloses the use of multiple phosphors with difference activators in order to generate white light. (Paragraph 0047).

Claims 1, 2, 3, 7, 8, 30, 31, 32, 36, 37, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Velthaus et al. (US 5,505,986)

Regarding claims 1, 2, 3, 7, 8, 30, 31, 32, 36, 37, and 39, Velthaus discloses the use of light emitting device including a white emitting mixture of $\text{ZnSrGa}_2\text{S}_4\text{:Ce}$. (Column 3 lines 20-34). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively.

Claims 1-3, 7, 10-14, 30-32, 36, and 38-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Juestel et al. (US 2002/0105266)

Regarding claims 1-3, 7, 10-14, 30-32, 36, and 38-42, Juestel discloses the use of light emitting diode including a white emitting phosphor mixture of $(\text{Sr, Ca, Ba})(\text{Al, Ga})_2\text{S}_4\text{:Eu}$ and

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CaLa₂S₄:Ce. (Paragraphs 0028 and 0031). The activator would be doped in concentrations of between .0001% and 10% mol percent respectively. Further the diode emits light in the UV-Blue range to excite the stated phosphors.

Allowable Subject Matter

Claims 4, 9, 15, 19-21, 23, 29, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 4, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation a phosphor mixture including MA₂(S_xSe_y)₄:B, where M, A, and B are selected from the values given and x is between 0 and 0.5 while y is between 0 and 0.5.

Regarding claim 9, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 9, and specifically comprising the limitation a phosphor mixture including Zn_uSr_vGa₂(S_xSe_y)₄:Eu, where U and V are the values given and x is about 0.615 and y is about 0.385.

Regarding claim 15, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 15, and specifically comprising the limitation a phosphor mixture including Zn_uSr_vGa₂(S_xSe_y)₄:Eu, where U and V are the values given and x is about 0.615 and y is about 0.385.

Regarding claim 19, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 19, and specifically comprising the limitation

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a phosphor mixture including $MA_4(S_xSe_y)_7:B$. where M, A, and B are selected from the values given and x is between 0 and 0.5 while y is between 0 and 0.5.

Regarding claim 20, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 20, and specifically comprising the limitation a phosphor mixture including $MA_4(S_xSe_y)_7:B$. where M, A, and B are selected from the values given and x is between 0 and 0.5 while y is between 0.5 and 1.

Regarding claim 21, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 21, and specifically comprising the limitation a phosphor mixture including $MA_4(S_xSe_y)_7:B$. where M, A, and B are selected from the values given and x is about 0 and y is about 1.

Regarding claim 23, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 23, and specifically comprising the limitation a phosphor mixture including $Ba_uSr_vGa_4(S_xSe_y)_7:Eu$. where U and V are the values given and x is about 0.88 and y is about 0.12.

Regarding claim 23, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 23, and specifically comprising the limitation a phosphor mixture including $Ba_uSr_vGa_4(S_xSe_y)_7:Eu$. where U and V are the values given and x is about 0.88 and y is about 0.12.

Claim 33 is allowable for the same reasons as cited for claims 4 and 19 above.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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